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**ABSTRACT**

An opto-electronic video compression system is disclosed including a lens element for transmitting light of an image and having one or more lenses, each lens having a predetermined focal length. A sensor array includes a first sensor for receiving focused light from the lens element and a second sensor for receiving defocused light from the lens element, wherein the first sensor includes  $X \times Y$  pixels and samples the focused light at each of the  $X \times Y$  pixels, and the second sensor includes  $X/2 \times Y/2$  pixels and samples the defocused light at each of the  $X/2 \times Y/2$  pixels. An electronic differencing element in communication with the first and second sensor is also included for differencing the coefficients of co-located pixels.